Provider Education and Intervention Program Estimated Cost Savings

Kansas Medical Assistance Program

Retrospective Drug Utilization Review

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Executive Summary

This report prepared for the Kansas Medical Assistance Program shows the expected cost savings from using retrospective drug utilization review (RDUR) and provider education to effect appropriate prescribing and utilization and, in turn, prevent adverse drug reactions and reduce costs in a targeted population.

RDUR Program Summary

In an effort to improve clinical outcomes and reduce drug expenditures, as well as healthcare related costs, beneficiaries found to have a drug therapy issue were identified based on the RDUR intervention topics, and educational intervention letters were mailed to prescribers during federal fiscal year 2015 (FFY 2015). The drug claims for the selected beneficiaries were evaluated for the 6 months prior to the intervention and the 6 months post-intervention to determine the impact of the RDUR intervention letters. This report is a summary of all RDUR interventions mailed in FFY 2015.

Estimated Cost Savings

The estimated cost savings are calculated by looking at actual drug claims history for 6 months before intervention and 6 months following intervention in both the intervention and random comparison groups. The difference between the two groups is the estimated cost savings. For interventions performed between October 1, 2014 and September 30, 2015, there was an ***estimated cost savings of $74,819.***

Table 1 – Summary of the Estimated Cost Savings for all RDUR Interventions in FFY 2015

	Intervention Group Change between 6 Month Pre- and Post-	Comparison Group Change between 6 Month Pre- and Post-	Estimated Cost Savings
All Interventions	$112,563	$37,744	$74,819

Retrospective Drug Utilization Review Program Description

RDUR seeks to assist providers by calling their attention to the possibility of adverse drug effects. The provider needs to know when such a possibility exists. Many clinical factors influence prescription decisions, including the beneficiary's health status, side effects reported by the beneficiary or detected by the provider, and available alternative treatments. Non-clinical factors also enter into the equation. To prescribe appropriately, the provider needs all relevant clinical and personal information, including the drugs ordered by other prescribers.

Drug therapy so dominates medical practice today that providers are more aware than ever of the need to identify adverse drug effects. However, proliferating drugs and medical specialties increasingly complicate this task. Few providers are fully knowledgeable about all drugs their beneficiaries may receive. In addition, many beneficiaries also lack coordinated medical care, with no single, central practitioner responsible for assuring that all elements of their care are compatible. Practitioners are left to achieve this individually. Since each beneficiary may consult a variety of practitioners, fragmented healthcare multiplies the risk of adverse drug events.

RDUR interventions seek to close this knowledge gap by:

- Analyzing beneficiary drug and medical history using clinical criteria
- Consolidating each beneficiary's drug and medical therapy history in a single, highly usable document
- Identifying potential drug therapy problems such as drug-disease conflicts, drug-drug interactions, over-utilization, under-utilization, and therapeutic appropriateness
- Notifying and presenting apparent drug therapy problems to providers

Providing practitioners with specific, focused and comprehensive drug information helps them zero in on unsuspected problems. This information allows providers to make timely changes in prescriptions and keep these problems from growing. Beneficiaries avoid potential adverse drug events, and the Kansas Medical Assistance Program avoids unnecessary medical, hospital, and prescription drug expenses.

Retrospective DUR Program Description

In an effort to promote appropriate prescribing and utilization of medications, Health Information Designs (HID) currently performs RDUR for the Kansas Medical Assistance Program. HID identifies beneficiaries with potential drug therapy problems based on specific clinical criteria and mails RDUR intervention letters to prescribers. HID's RDUR program includes both a computerized and clinical pharmacist review of prescription and medical claims history. A computer-based review of individual beneficiary histories is performed using clinically-based criteria to identify potential drug therapy issues. Then, clinical pharmacists further review beneficiary profiles containing potential drug therapy problems to confirm the clinical significance of risk. Once a clinical pharmacist confirms a potential issue and quality assurance measures have been completed, an RDUR intervention letter is mailed to the provider. The RDUR intervention letter describes the potential drug therapy problem and includes a 6-month comprehensive drug and diagnosis history profile. When more than one provider is attributed to a pertinent claim on a beneficiary profile, letters are mailed to all relevant providers. Informing providers of a beneficiary's complete drug and diagnosis history, including

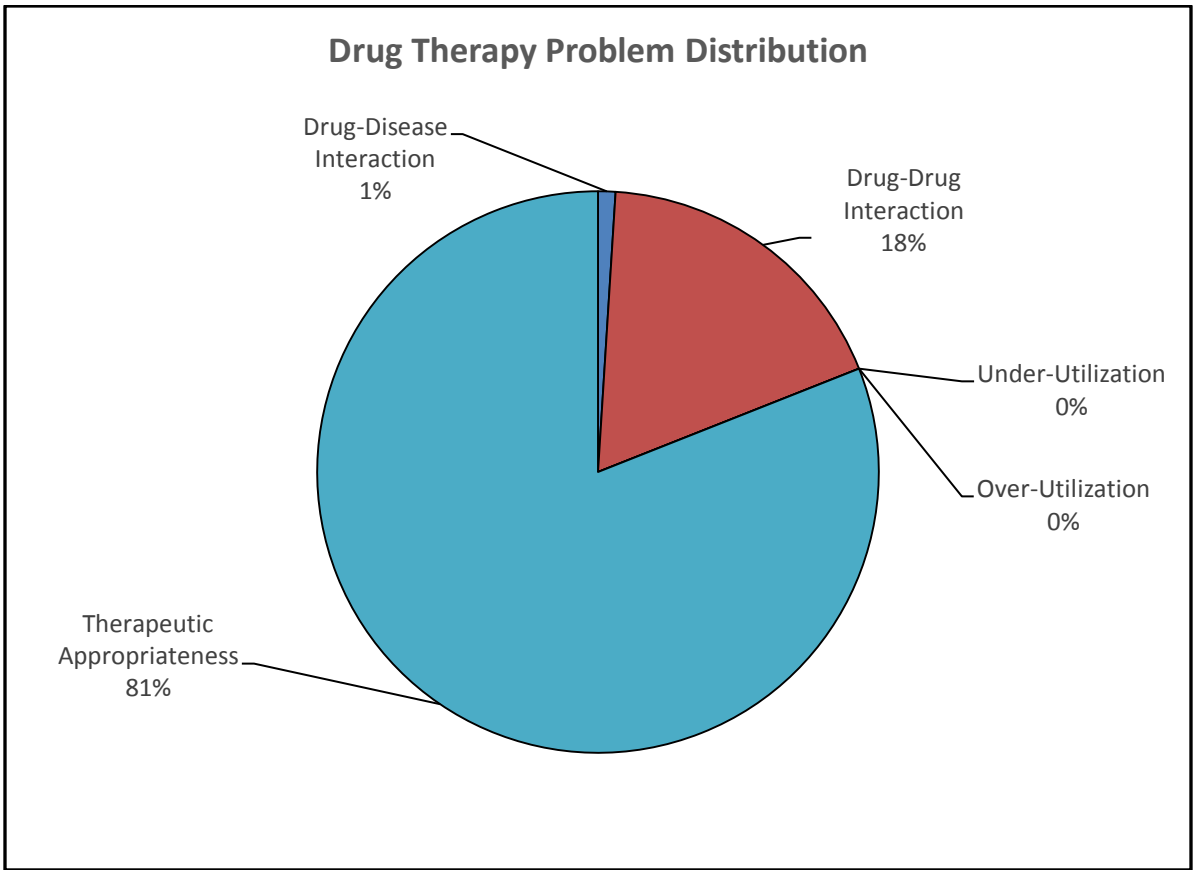
medications prescribed by other providers, helps improve beneficiary care. Provider responses to the drug therapy problem in the letter are requested and documented in HID's RDUR system for evaluation.

While the RDUR intervention letter itself only addresses a specific intervention topic, HID includes a complete beneficiary profile with up to two additional alert messages regarding drug therapy issues and a 6-month history of drug claims and diagnoses along with the letter. Providers have the opportunity to review the entire beneficiary drug and diagnosis history, including medications prescribed by other providers, and make changes to therapies based upon this information. For this reason, whenever RDUR intervention letters are sent to providers, the impact on total drug utilization should be measured. Therefore, total drug utilization in the targeted intervention population was evaluated for 6 months before and after letters were mailed to determine any change in drug cost.

Problems Identified

During FFY 2015, HID reviewed 413 profiles with potential drug therapy problems and mailed letters to the respective providers. The types of drug therapy issues were divided into five general categories: drug-disease interactions, drug-drug-interactions, over-utilization, under-utilization, and therapeutic appropriateness.

Figure 1 - Distribution of Drug Therapy Problems by Type for FFY 2015.



Drug-Disease Conflicts

Drug-disease conflicts include drug therapies that could precipitate or worsen existing medical conditions. Examples include the following:

- Gastrointestinal disease worsened by non-steroidal anti-inflammatory agents
- Seizure disorders worsened by specific antipsychotic agents or antidepressants
- Respiratory diseases worsened by specific anti-hypertensive agents

Drug-Drug Interactions

Drug-drug interactions occur when beneficiaries receive two or more drugs that, when taken together, may interact to produce adverse effects. Beneficiaries who received two or more drugs that, when taken together, may interact and produce undesirable side effects were identified for intervention. Adverse effects may occur because one drug may change the way the body handles a second drug, for example, by causing it to be eliminated more slowly than anticipated. This can cause the second drug to accumulate in the body and cause dose-related adverse effects. A beneficiary may also take two drugs with similar side effect profiles, causing more pronounced side effects.

Over-Utilization

Over-utilization occurs when beneficiaries take medications (particularly drugs with the potential for abuse or addiction) in high doses or for excessive lengths of time. Drugs used in high quantities or for unduly prolonged periods of time place beneficiaries at unnecessary risk of adverse effects. Over-utilization may result from poor provider- beneficiary communication, misunderstanding of the medication's risk, or fear of recurring disease symptoms.

Under-Utilization

Under-utilization is defined as beneficiaries taking medications for the treatment of chronic conditions at levels below the acceptable minimum dose. Effective treatment of chronic diseases like high blood pressure, diabetes, and seizure disorders depends on beneficiaries regularly taking their prescribed medications. Those who feel well, however, may not realize the need to follow their prescription plan, either because they do not understand that treatment must continue regardless of how they feel or because side effects have discouraged them. Screening the histories of beneficiaries under treatment for chronic conditions allows us to identify those using less than the prescribed doses of their medication. The provider can then reinforce the importance of regular, long-term treatment and consider changes in medications to eliminate side effects.

Therapeutic Appropriateness

Therapeutic appropriateness monitors beneficiaries to ensure the right medication is being used and includes:

- Beneficiaries who are not taking certain medications that are considered the standard of care for certain medical conditions or disease states
- Cost appropriate therapies when multiple treatments are available for a disease state
- Appropriate use of generic medications when available

Analysis Methodology

Each month, HID evaluates pharmacy and medical claims data against thousands of proprietary criteria. Once beneficiaries have been identified and RDUR letters have been mailed to their providers, HID tracks drug costs for both the intervention group and a comparison group. Both groups are followed for 6 months pre- and post-intervention to determine the change in pharmacy claims. The comparison group is used to account for changes within the program including new limitations, changes in drug costs, and overall utilization trends.

Beneficiary Selection

A total of 413 profile reviews met the criteria for intervention letters during FFY 2015. The drug history profile for each beneficiary was reviewed by a clinical pharmacist to determine if the beneficiary should be selected for intervention.

After beneficiaries were selected for intervention, educational intervention letters—along with a complete drug and diagnosis history profile listing all pharmacy and available diagnosis claims data for the past 6 months—were mailed to the appropriate prescribers. (Prior to mailing, generated letters undergo a quality assurance [QA] process. Some letters are not mailed due to various reasons, including missing or invalid prescriber addresses.)

The intervention letter and drug history profile included a response form, which allowed the provider to provide feedback and enabled HID to determine whether any action would be taken in response to the letter. The response form includes standard responses printed on the form that allow the prescriber to check a box for the response that best fits their intended action as well as space for written comments from the prescriber.

The prescribers were encouraged to return the response forms using the self-addressed, stamped envelope included with the intervention letter or via fax. HID tracks all response forms returned and all written comments from prescribers for evaluation.

Table 2 - Quarterly RDUR Prescriber Letter Activity Summary for All DUR Interventions FFY 2015

Time Frame	Profiles Reviewed	Confirmed Cases	Alert* Letters	Prescriber Responses To Alerts**	Response Rate
Oct 2014 – Dec 2014	32	31	31	16	52%
Jan 2015 – Mar 2015	194	165	152	30	20%
Apr 2015 – Jun 2015	93	41	51	16	31%
Jul 2015 – Sep 2015	94	93	91	14	15%
Totals	***413***	***330***	***325***	***76***	***23%***

*The number of alerts may exceed the number of confirmed cases because cases in which more than one prescriber is involved result in multiple alert letters.

**Prescriber responses are not used to measure therapeutic improvement and cost savings.

Estimated Cost Savings Methodology

To determine the impact of RDUR intervention letters on overall drug expenditures, total drug utilization in the targeted intervention population was evaluated 6 months before and 6 months after intervention letters were mailed. HID then compared drug expenditures and utilization in the targeted intervention population for the pre- and post- intervention timeframes with a comparison group to determine the estimated impact of the RDUR intervention letters.

The comparison group consisted of a random group of beneficiaries who were not chosen for RDUR intervention letters. For a beneficiary to be included in the analysis for either the intervention or comparison groups, he or she had to have at least one claim for any drug in the pre and post-intervention periods. The 1994 CMS report∗, *Guidelines for Estimating the Impact of Medicaid DUR*, was used to develop the methodology for measuring the impact of the RDUR program. Simply stated, the preferred and recommended method of the 1994 CMS guidelines is a scientifically-sound methodology that involves comparison of all beneficiaries who received interventions (intervention group) with those who did not receive interventions (comparison group). This preferred comparison group method has the most validity and accuracy of any other method*.

For the purpose of this report, beneficiaries were analyzed using *180 days* of claims data before and after the RDUR intervention date. In addition, a null period of *14 days* was included between the pre- and post-analysis periods to allow for delivery and circulation of the RDUR intervention letters. Beneficiaries were analyzed based on whether a single or duplicate intervention existed (a duplicate intervention being the occurrence of at least two RDUR intervention letters on the same beneficiary within FFY 2015). The pharmacy claims costs were compared for the pre- and post-intervention periods. To evaluate the impact of changes over time, such as manufacturer drug price changes or policy changes, the intervention group for each case was compared to a similar comparison group. Anything that happens to one group will also affect the other group and negate any effects.

Cost Savings Analyses Results

For the intervention and comparison group beneficiaries who had claims for any drug during the pre- and post-intervention periods, HID evaluated total drug expenditures and claims for the 6 months prior to and 6 months after the letters were mailed [1].

Table 3 shows the results for both the intervention and comparison group for the pre- and post-intervention timeframes for beneficiaries with single and multiple interventions during FFY 2015.

∗ Zimmerman, T. Collins, E. Lipowski, D. Kreling, J. Wiederholt. “Guidelines for Estimating the Impact of Medicaid DUR”. Contract #500-93-0032. United States Department of Health and Human Services, Health Care Financing Administration: Medicaid Bureau. August 1994.

[1] Calculation amounts may vary slightly due to rounding.

Table 3 - Estimated Cost Savings for FFY 2015

	Intervention Group Change between 6 Month Pre- and Post-	Comparison Group Change between 6 Month Pre- and Post-	Estimated Cost Savings
Single Intervention	$99,047	$67,414	$31,633
Multiple Intervention	$13,516	-$29,670	$43,186
Total Estimated Cost Savings			***$74,819***

Results Discussion and Limitations

All drug claims and some medical claims or diagnosis data is available for analysis. Any medical or diagnosis data available is processed along with the pharmacy claims data to provide as complete a drug and diagnosis history as possible for each beneficiary. Medical data that includes the cost associated with hospitalization, doctor visits, and emergency room visits is not analyzed as part of the RDUR intervention program. However, it is suspected that by reducing therapy problems—including inappropriate use of drugs and increased risk for drug interactions—other medically-associated costs due to adverse drug reactions, drug abuse, and diversion would be reduced in addition to the reduction in drug expenditures.

Another limitation resulted from the fact that no eligibility file is used to determine whether beneficiaries continued to be eligible for Medicaid for the full 6 months before and after intervention letters were mailed. In order to provide a conservative cost savings estimate, HID removes beneficiaries that do not have at least one drug claim in the pre- and post-intervention periods, which removes beneficiaries who have lost eligibility or are deceased. This may underestimate the savings of the program if beneficiaries continue to be eligible for services but do not receive a pharmacy claim in both analysis periods.

Conclusions

The RDUR intervention program provides an important educational service to providers for the Kansas Medical Assistance Program. During FFY 2015, 413 profile reviews were identified for RDUR intervention letters. The RDUR intervention program alerted the beneficiary's provider to the drug therapy issue and provided a complete beneficiary profile including a complete pharmacy and medical claims history. For FFY 2015, the overall prescriber response rate to interventions was 23% and there was an estimated cost savings of $74,819.